

## **REMARKS**

Favorable reconsideration and allowance of this application are requested.

As a procedural note, the present amendment is being filed concurrently with a formal Request for Continued Examination (RCE) under 37 CFR §1.114. Accordingly withdrawal of the "finality" of the March 14, 2006 Official Action is in order so as to allow entry and consideration of the amendments and remarks presented herewith.

By way of the amendment instructions above, pending independent claims 1, 9, 12 and 23 have been amended so as to clarify that the induced stress according to the present invention is achieved by virtue of a mismatch of the coefficient of thermal expansion (CTE) as between the fiber optic condition sensor and the coating (e.g., the electrical insulator).

Thus, these independent claims now require that the fiber optic condition sensor exhibits an initial wavelength at a zero state prior to being operatively associated with the electrical insulator. Each of the electrical insulation and the fiber optic condition sensor has a coefficient of thermal expansion (CTE) which is sufficiently different from one another so as to induce compressive stress on the fiber optic condition sensor to achieve a wavelength change thereof during a normal state which is greater than about 0.1 nm relative to the initial wavelength of the fiber optic condition sensor at the zero state to thereby achieve the predetermined strain characteristic which is responsive to the selected condition of the wire assembly to be detected. The sensor detects a change in the predetermined strain characteristic which is indicative of the condition of the wire assembly during an abnormal condition due to the induced compressive stress achieved by the different CTE of the electrical insulation and the sensor.

Support for the amendments to independent claims 1, 9, 12 and 23 can be found throughout the originally filed specification, for example at page 1, lines 1-27 and Example 1 on page 20.

Claim 18 has been canceled as redundant in view of the amendments to its independent claim 12.

Therefore, claims 1, 3-14, 16-17, 19-24 and 44-47 remain pending in this application for which favorable reconsideration is requested.

The only issue remaining to be resolved in this application is the Examiner's art-based rejections. Specifically, the Examiner asserts that prior claims 1, 3-7, 9, 12-13 and 16-18 are anticipated (35 USC §102(e)) by Bjerkan et al (USP 6,784,983), while claims 8, 10-11, 19-24 and 44-47 are "obvious" (35 USC §103(a)) from Bjerkan et al. Applicants respectfully submit that Bjerkan et al is inappropriate as a reference against the amended claims presented above.

The Examiner seizes on the disclosure in Bjerkan et al at column 3, line 16 + where it is stated that the wavelength associated with light reflections from Bragg gratings is uniquely given by the period of the grating and thus "...the strain from the surrounding structure on each Bragg grating." Such a statement, in applicants' view, does not lead an ordinarily skilled person to the present invention whereby **mismatched** coefficient of thermal expansions (CTE) are employed so as to physically induce **compressive** stress on the Bragg grating. Specifically, the aspects described more fully at page 14 of the originally filed specification and now recited in the pending independent claims 1, 9, 12 and 23 do not at all appear to be contemplated by the applied Bjerkan et al patent. Hence, Bjerkan et al does not anticipate the presently claims invention as defined by such independent claims and the claims dependent therefrom.

Nor does Bjerkan et al render obvious the presently claimed invention. In this regard, applicants note that Bjerkan et al mentions that techniques such as different reflection characteristics and pulsed emitted signals may be imparted to the Bragg gratings so as to achieve different sensor capabilities. (See column 3, lines 28-43.) This disclosure in Bjerkan et al most certainly does not lead an ordinarily skilled person to the presently claimed invention wherein compressive stresses are induced on the Bragg gratings by virtue of different the CTE's of the polymeric coating material and the sensor element.

Hence, withdrawal of the rejection advanced against claims 8, 10-11, 19-24 and 44-45 under 35 USC §103(a) is in order.

Applicants respectfully request reconsideration and withdrawal of the 35 USC §103(a) rejection advanced with respect to the subject matter of claim 46-47. In this regard, independent claim 46 and claim 47 dependent therefrom relate to a magnetic field strength sensor embodiment according to the presently invention. Applicants suggest that none of the art of record -- including the newly cited Bjerkan et al reference -- disclose or even remotely suggest such a structure which may function to detect magnetic field strength.

In this regard, the Examiner's purported statement of "obviousness" with respect to claim 46 and its requirement of a magnetostrictive coating is flawed. Specifically, the Examiner asserts that the use of a magnetostrictive coating would be obvious because it would **prevent** the magnetic field from adversely affecting the operation of the sensor. In fact of course the magnetostrictive coating of the present invention affects the sensor in the sense that it induces a strain characteristic in response to exposure to a magnetic field. Hence, even by the Examiner's reasoning, the provision of a magnetostrictive coating would be **unobvious** over the art of record. Stated another way, the Examiner (a person of at least ordinary skill in this art) has postulated

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a function attributable to the magnetorestrictive coating which is erroneous in the context of the present invention and hence does not amount to meeting his burden of establishing a prima facie case of "obviousness". Hence, the Examiner's reasoning is evidence that ordinarily skilled persons would **not** be lead to the invention as defined by claims 46-47. Withdrawal of the rejection advanced against claims 46-47 under 35 USC §103(a) for this reason also is in order.

Every effort has been made to advance prosecution of this application to allowance. Therefore, in view of the amendments and remarks above, applicant suggests that all claims are in condition for allowance and Official Notice of the same is solicited.

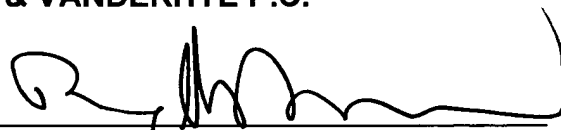
Should any small matters remain outstanding, the Examiner is encouraged to telephone the Applicants' undersigned attorney so that the same may be resolved without the need for an additional written action and reply.

An early and favorable reply on the merits is awaited.

Respectfully submitted,

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